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20. (New) The method of claim 17, further comprising containing a portion of the pair of wires between the housing and the second connector in an insulating sleeve.

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21. (New) The method of claim 17, further comprising routing each wire of the pair of wires through a hole formed in a housing of the battery cap.

REMARKS

In response to the Office Action mailed April 24, 2002, Applicant's respectfully request reconsideration. To further the prosecution of the application, claims 11-16 have been cancelled, claims 1, 9 and 10 have been amended, and claims 17-21 have been added to the application. Accordingly, claims 1-10 and 17-21 are pending in the application with claims 1, 9 and 17 being in independent format. A copy of the amended claims and amended paragraph of the specification marked-up to show the changes made herein are included in Appendix A, and a copy of the pending claims is included in Appendix B. The application as presented is believed to be in allowable condition.

In the Office Action, the specification was objected to based on informalities. The specific informalities referred to in the Office Action have been amended. In addition, the title of the invention was objected to as not being descriptive. The title has been replaced, and the new title is descriptive of the invention to which the claims are directed.

Claims 1-16 have been objected to under 37 CFR 1.75(d) on the basis of the specification not clearly stating the specific type of devices that function as the energy storage device in the claims. The specification does include the term energy storage device (see e.g., page 2, line 13). In addition, the specification extensively refers to the use of a battery in an uninterruptible power supply. As is readily known by those skilled in the art, a battery is a device that functions as an energy storage device. Based on the foregoing, the terms in the claims have clear support in the specification and the meanings of the terms in the claims is ascertainable by reference to the description. Accordingly, the objection to the claims under 37 CFR 1.75(d) should be withdrawn.

Claims 1, 4, 6, 9 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Lin (U.S. Patent 5,389,462). As discussed below, the claims have been amended herein and are patentable over the proposed combination of the admitted prior art and Lin.

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Claim 1 has been amended herein and is directed to an uninterruptible power supply for providing AC power to a load. The uninterruptible power supply includes an input, an output, an inverter to receive DC power and to provide AC power, a first connector electrically coupled to the inverter, and an energy storage device that provides the DC power. The energy storage device includes a plurality of terminals, a plurality of lead wires, each lead wire having a first end connected to one of the terminals of the energy storage device, a second connector adapted to connect to the first connector, each lead wire having a second end connected to the second connector, an energy storage device cap attached to the energy storage device and covering the terminals and the first end of each of the lead wires. The energy storage device cap has a housing that forms an opening through which the plurality of lead wires pass, and an underside of the energy storage device cap is constructed and arranged to provide paths to route the plurality of lead wires to the plurality of terminals.

The admitted prior art of Fig. 1 of the application includes an uninterruptible power supply having among other things a battery to provide DC power. Lin discloses a storage battery having a cover lid 13. The Office Action states that it would have been obvious to modify the battery of the admitted prior art to have a cap as taught by Lin.

In contrast with claim 1, neither the admitted prior art, Lin, nor the combination thereof, discloses or suggests an uninterruptible power supply having an energy storage device cap that has a housing that forms an opening through which a plurality of lead wires pass or an underside that is constructed and arranged to provide paths to rout the plurality of lead wires to a plurality of terminals as recited in claim 1. The admitted prior art does not include an energy storage device cap, and the cover lid of Lin does not include an opening or an underside having the limitations recited in claim 1. Accordingly, claim 1 is distinguishable over the admitted prior art and Lin, and the rejection of claim 1 under 35 U.S.C. 103 should be withdrawn.

Claims 4-6 depend from claim 1 and are patentable for at least the same reasons.

Independent claim 9 has been amended herein and is directed to an uninterruptible power supply for providing AC power to a load. The uninterruptible power supply includes an input, an output, an inverter to receive DC power and to provide AC power, a first connector electrically coupled to the inverter, and an energy storage device that provides the DC power, the energy storage device having a plurality of terminals and a plurality of leads wires, a first end of each of the lead wires connected to one of the terminals. The uninterruptible power supply also includes housing means for covering the terminals and the first end of each of the lead wires, the housing

means forming an opening for receiving the plurality of lead wires and including means for routing each of the lead wires to one of the plurality of terminals.

In contrast with claim 9, neither the admitted prior art, nor Lin, nor the proposed combination thereof discloses or suggests an uninterruptible power supply having housing means that form an opening for receiving a plurality of lead wires and including means for routing each of the lead wires to one of the plurality of terminals. Accordingly, claim 9 is distinguishable over the proposed combination of the admitted prior art and Lin, and the rejection of claim 9 under 35 U.S.C. 103 should be withdrawn.

Claim 10 depends from claim 9 and is patentable for at least the same reasons.

Claims 2, 3 and 7 have been rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art, Lin and one additional reference. Each of these claims depends from claim 1 and is patentable for at least the same reasons.

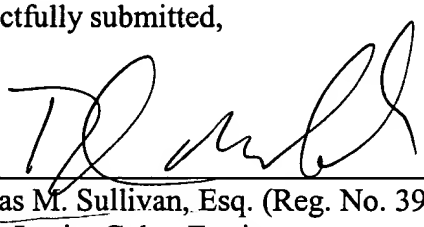
Claims 17-21 have been added to the application. Claim 17 is an independent claim directed to a method of installing a battery into an uninterruptible power supply, the uninterruptible power supply having a first connector to couple to a battery. The method includes providing a battery having a first terminal and a second terminal, providing a battery cap having a pair of lead wires integrated into the battery cap, the lead wires passing out of the battery cap and terminating in a second connector, installing the battery cap on the battery such that each wire of the pair of lead wires mates with one of the first terminal and the second terminal, installing the battery into the uninterruptible power supply and mating the first connector with the second connector.

Claim 17 is patentable over the prior art of record for reasons similar to claims 1 and 7 discussed above. Specifically, the prior art of record does not disclose or suggest a method of installing a battery that includes, among other limitations, providing a battery cap having a pair of lead wires integrated into the battery cap, the lead wires passing out of the battery cap and terminating in a second connector. Accordingly, claim 17 is believed to be in allowable condition.

Claims 18-21 depend from claim 17 and are patentable for at least the same reasons.

Based on the foregoing, this application is believed to be in allowable condition, and a notice to that effect is respectfully requested. If the Examiner has any questions, please contact the undersigned at the number provided below.

Respectfully submitted,



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ATTACHMENT A

Amended Claims

In the Specification

Please replace the paragraph starting on page 1, line 11 with the following replacement paragraph:

(Amended) Users of uninterruptible power supply (UPS) system having a battery pack may be subjected to hazardous voltages when users themselves connect or disconnect the battery from the UPS while the UPS is still active. For instance, certain UPS system designs do not use an isolating transformer to isolate high input AC voltage from the UPS circuit. Therefore, a failure of one or more components of the UPS may result in a hazardous condition where high AC voltage is present at the battery leads. Any exposed battery leads or terminals may expose the user to this dangerous voltage. Furthermore, under various safety standards in various countries, battery connections need to provide protection that meet certain standards such as the Underwriters Laboratories (UL) finger test and the Verband Deutscher Elektringenieure (VDE) probe test. The UL finger test mandates that a human finger should not come in contact with any live parts during normal operation of a device. The VDE probe test requires that a specified probe should not be able to touch the active contacts of the battery or its connectors.

1. (Amended) An uninterruptible power supply for providing AC power to a load, the uninterruptible power supply comprising:

an input to receive AC power from an AC power source;

an output that provides AC power;

an inverter to receive DC power and to provide AC power;

a first connector electrically coupled to the inverter;

an energy storage device that provides the DC power, the energy storage device including:

a plurality of terminals;

a plurality of lead wires, each lead wire having a first end connected to one of the terminals of the energy storage device;

a second connector adapted to connect to the first connector [of the inverter], each lead wire having a second end connected to the second connector;

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an energy storage device cap attached to the energy storage device and covering the terminals and the first end of each of the lead wires, wherein the energy storage device cap has a housing that forms an opening through which the plurality of lead wires pass, and wherein an underside of the energy storage device cap is constructed and arranged to provide paths to route the plurality of lead wires to the plurality of terminals; and

a transfer switch constructed and arranged to select one of the AC power source and the energy storage device as an output power source for the uninterruptible power supply.

9. (Amended) An uninterruptible power supply for providing AC power to a load, the uninterruptible power supply comprising:

an input to receive AC power from an AC power source;

an output that provides AC power;

an inverter to receive DC power and to provide AC power;

a first connector electrically coupled to the inverter;

an energy storage device that provides the DC power [and having a second connector to connect to the first connector of the inverter], the energy storage device having a plurality of terminals and a plurality of leads wires, a first end of each of the lead wires connected to one of the terminals;

housing means for covering the terminals and the first end of each of the lead wires, the housing means forming an opening for receiving the plurality of lead wires and including means for routing each of the lead wires to one of the plurality of terminals; and

a transfer switch constructed and arranged to select one of the AC power source and the energy storage device as an output power source for the uninterruptible power supply.

10. (Amended) The uninterruptible power supply as in claim 9, [further comprising: means for attaching covering means to the energy storage device] wherein the housing means includes means for providing strain relief for the plurality of lead wires.

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Please add the following new claims 17-21:

17. (New) A method of installing a battery into an uninterruptible power supply, the uninterruptible power supply having a first connector to couple to a battery, the method comprising:

providing a battery having a first terminal and a second terminal;

providing a battery cap having a pair of lead wires integrated into the battery cap, the lead wires passing out of the battery cap and terminating in a second connector;

installing the battery cap on the battery such that each wire of the pair of lead wires mates with one of the first terminal and the second terminal;

installing the battery into the uninterruptible power supply and mating the first connector with the second connector.

18. (New) The method of claim 17, wherein the mating of the first connector and the second connector is accomplished without the use of a tool.

19. (New) The method of claim 17, further comprising routing each wire of the pair of wires through a separate path in the battery cap.

20. (New) The method of claim 17, further comprising containing a portion of the pair of wires between the housing and the second connector in an insulating sleeve.

21. (New) The method of claim 17, further comprising routing each wire of the pair of wires through a hole formed in a housing of the battery cap.

ATTACHMENT B

Pending Claims

1. (Amended) An uninterruptible power supply for providing AC power to a load, the uninterruptible power supply comprising:

an input to receive AC power from an AC power source;

an output that provides AC power;

an inverter to receive DC power and to provide AC power;

a first connector electrically coupled to the inverter;

an energy storage device that provides the DC power, the energy storage device including:

a plurality of terminals;

a plurality of lead wires, each lead wire having a first end connected to one of the terminals of the energy storage device;

a second connector adapted to connect to the first connector, each lead wire having a second end connected to the second connector;

an energy storage device cap attached to the energy storage device and covering the terminals and the first end of each of the lead wires, wherein the energy storage device cap has a housing that forms an opening through which the plurality of lead wires pass, and wherein an underside of the energy storage device cap is constructed and arranged to provide paths to route the plurality of lead wires to the plurality of terminals; and

a transfer switch constructed and arranged to select one of the AC power source and the energy storage device as an output power source for the uninterruptible power supply.

2. The uninterruptible power supply as in claim 1, wherein a portion of the energy storage device cap is configured to provide strain relief to the lead wires.

3. The uninterruptible power supply as in claim 2, wherein the strain relief portion of the energy storage device cap is a plurality of posts in which a lead wire can be weaved.

4. The uninterruptible power supply as in claim 1, wherein the energy storage device cap is made of an insulating material.

5. The uninterruptible power supply as in claim 1, wherein the energy storage device cap provides impact protection to the terminals of the energy storage device.

6. The uninterruptible power supply as in claim 1, wherein the first and second connector are constructed to mate without a use of a tool.

7. The uninterruptible power supply as in claim 1, further comprising:

an insulating tube formed around the plurality of lead wires of the energy storage device.

8. The uninterruptible power supply as in claim 1, further comprising:

a shrink wrap material that, when heated, attaches the energy storage device cap to the energy storage device.

9. (Amended) An uninterruptible power supply for providing AC power to a load, the uninterruptible power supply comprising:

an input to receive AC power from an AC power source;

an output that provides AC power;

an inverter to receive DC power and to provide AC power;

a first connector electrically coupled to the inverter;

an energy storage device that provides the DC power, the energy storage device having a plurality of terminals and a plurality of leads wires, a first end of each of the lead wires connected to one of the terminals;

housing means for covering the terminals and the first end of each of the lead wires, the housing means forming an opening for receiving the plurality of lead wires and including means for routing each of the lead wires to one of the plurality of terminals; and

a transfer switch constructed and arranged to select one of the AC power source and the energy storage device as an output power source for the uninterruptible power supply.

10. (Amended) The uninterruptible power supply as in claim 9, wherein the housing means includes means for providing strain relief for the plurality of lead wires.

17. (New) A method of installing a battery into an uninterruptible power supply, the uninterruptible power supply having a first connector to couple to a battery, the method comprising:

providing a battery having a first terminal and a second terminal;

providing a battery cap having a pair of lead wires integrated into the battery cap, the lead wires passing out of the battery cap and terminating in a second connector;

installing the battery cap on the battery such that each wire of the pair of lead wires mates with one of the first terminal and the second terminal;

installing the battery into the uninterruptible power supply and mating the first connector with the second connector.

18. (New) The method of claim 17, wherein the mating of the first connector and the second connector is accomplished without the use of a tool.

19. (New) The method of claim 17, further comprising routing each wire of the pair of wires through a separate path in the battery cap.

20. (New) The method of claim 17, further comprising containing a portion of the pair of wires between the housing and the second connector in an insulating sleeve.

21. (New) The method of claim 17, further comprising routing each wire of the pair of wires through a hole formed in a housing of the battery cap.

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